

Lightweight Integrated Solar Array and Transceiver (LISA-T)

Completed Technology Project (2015 - 2016)



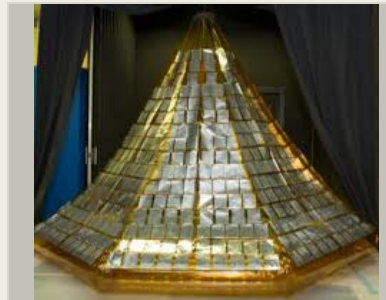
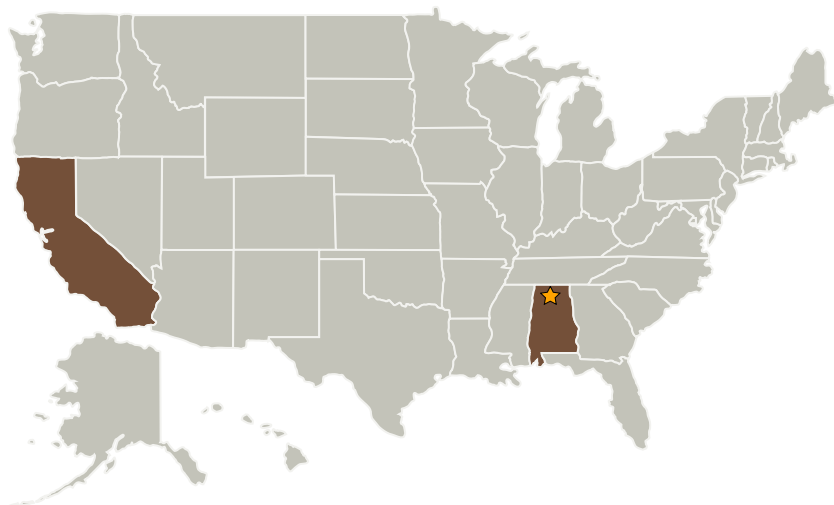
Project Introduction

NASA's Lightweight Integrated Solar Array and Transceiver, LISA-T will develop, test, and demonstrate a deployable structure on which lightweight photovoltaic devices and transceiver elements are embedded to provide both power and communications for a small scale spacecraft. The system will provide a >2x increase in power available to a 3U satellite, as well as, a >2x increase in specific power generation (Watts/kilogram) and a >2x enhancement of stowed volume (Watts/cubic-meter) compared to state-of-the-art arrays. The team will also demonstrate a path to reduced array costs and the deployment of communication devices both with and without solar devices.

Anticipated Benefits

As most CubeSats are constrained to 10's of watts of electrical power due to the limited surface area available for photovoltaics, LISA-T seeks to address the issue by developing deployable arrays that increase available surface area for photovoltaics thus providing hundreds of watts.

Primary U.S. Work Locations and Key Partners



The LISA-T test article at MSFC, September 2013

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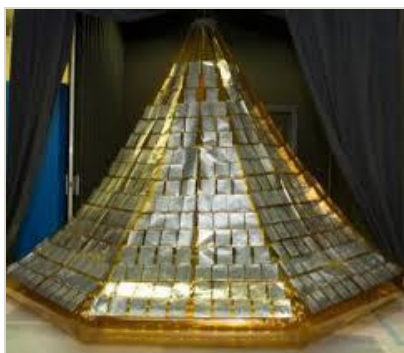
Organizations Performing Work	Role	Type	Location
★ Marshall Space Flight Center (MSFC)	Lead Organization	NASA Center	Huntsville, Alabama
ManTech International Corporation	Supporting Organization	Industry	
Nexolve Corporation	Supporting Organization	Industry	Huntsville, Alabama

Primary U.S. Work Locations

Alabama

California

Images



Project Image

The LISA-T test article at MSFC,
September 2013

(<https://techport.nasa.gov/image/35781>)

Project Website:

<https://www.nasa.gov/directorates/spacetech/home/index.html>

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Marshall Space Flight Center (MSFC)

Responsible Program:

Center Innovation Fund

Project Management

Program Director:

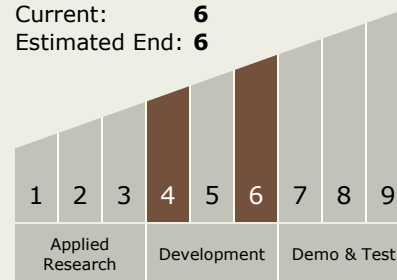
Michael R Lapointe

Project Manager:

John A Carr

Technology Maturity (TRL)

Start: 4
Current: 6
Estimated End: 6



Technology Areas

Primary:

Continued on following page.

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Technology Areas (cont.)

- TX03 Aerospace Power and Energy Storage
 - └ TX03.1 Power Generation and Energy Conversion
 - └ TX03.1.1 Photovoltaic

Target Destination

Earth